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The purposes of a study conducted in Texas and Mexico were to examine the language performance of boys and girls in 3 cultures (Mexican, Mexican American, and Anglo American), and to determine if girls exceeded boys in verbal performance in each of these cultures. The Van Alstyne Picture Vocabulary Test (an English language instrument translated into Spanish especially for this study) was administered to 30 first-graders in each of the 3 cultures. Although limited by the small sample and certain linguistic problems, statistical techniques were utilized which led to the conclusion that there were no significant differences between girls and boys on a test of verbal ability. It was recommended that additional cross-cultural research be conducted with the Mexican American and Mexican. The translated version of the test is contained in the appendix. (SW)

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A CROSS-CULTURE STUDY OF SEX DIFFERENCES AMONG FIRST-GRADERS ON A VERBAL TEST

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN COUNSELING AND GUIDANCE IN THE GRADUATE SCHOOL OF THE TEXAS WOMAN'S UNIVERSITY

COLLEGE OF

E D U C A T I O N

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We hereby recommend that the thesis prepared under our supervision by Teresa Quijano

entitled "A Cross-Culture Study of Sex Differences Among First-Graders on a Verbal Test"

be accepted as fulfilling this part of the requirements for the Degree of Master of Arts.

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This Thesis is

Dedicated to My Beloved Parents

In Memory of My

Father

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The author also acknowledges committee members Dr. Prater, Dr. Gardner, Dr. Redwine, and Dr. Ted Booker, Dean of the College of Education, and the superintendents of schools in which the study was conducted. Acknowledgement is extended also to Mr. Porter S. Garner, Sr., Mr. J. W. Nixon, and to friends, particularly Gloria Bonali who served the writer as a moral support.

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CHAPTER I

INTRODUCTION

In recent years there has been increasing interest in cross-cultural studies. The significance of this interest in cross-cultural studies is important in that most research is "culture-bound," that is, the findings may be valid in one culture but may not be valid in another. Therefore, it is important to verify research findings by conducting research with mixed cultures. This study proposes to investigate cross-cultural sex differences among first-graders on a test of verbal ability, a translation of the Van-Alstyne Picture Vocabulary Test.

Of particular interest in this study is the development of verbal intelligence among boys and girls. Studies indicating sex differences in verbal intelligence between boys and girls in the United States cannot be generalized to other cultures until comparable studies with cross-cultural groups have similarly indicated sex differences in verbal intelligence. Recent research in the United States indicates sex differences in verbal intelligence as early as the first grade. At least in American society it is believed that girls mature verbally much earlier than boys.

Previous language investigations have generally shown girls to be superior to boys on several language skills. The difference, however, has been small. In many of these investigations, both intelligence and socio-economic status, two variables which are known to be related to the linguistic development of children, have not always been equivalent for male and female children.

If real differences in language development exist between sexes, it becomes important to understand those environmental, physiological, and psychological factors which affect the sexes. Such factors may lead to a greater understanding of the processes of language development and retardation. One study was designed to control the influences of socio-economic and intelligence factors.[1] In this investigation, Winitz used 150 randomly selected, normal five-year-old children, consisting of 75 boys and 75 girls from a single community. The two sex groups were essentially the same with regard to chronological age, intelligence quotient, socio-economic status and family constellation. Each child was administered the Wechsler Intelligence Scale for Children. The Templin Screening Test of Articulation was used, and the Ammons Full Range Picture

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[1]Harris Winitz, "Language Skills of Male and Female Kindergarten Children," Journal of Speech and Hearing Research, 2 (December, 1959), 377-86.

Vocabulary Test, Form A, was administered. On language variables statistically significant differences favoring the girls were found on two of six verbalization measures and on one of four word-fluency measures. There were no significant differences found on the Templin Articulation test or the Ammons Vocabulary Test. It was concluded that the hypothesis of no language difference between sexes is tenable in the population of five-year-old children with regard to major verbalization skills, vocabulary skills, and three of four word-fluency measures.

In several contrasting investigations girls have been found to surpass boys in many aspects of early language development, such as amount of talking, number of different words used, and use of sentences. The amount of the difference between boys and girls has varied in different studies. These differences tend to indicate a superiority of girls. At the elementary school level there are usually more boys than girls with reading difficulties.

The purpose of this study is to examine sex differences in language development in three cultures, Anglo-American, Mexican-American, and Mexican. The contrast in the language and culture between children in Mexico and the United States is obvious. That Mexican-American children provide a third unique culture, however, is not so clear and deserves some description.

Most of the research on Mexican-American children focuses on their bilingualism. Bilingualism may be defined as the use of two languages, but there are limitations to this simple definition. Many problems that arise with Mexican-American children in American schools are primarily due to the fact that Spanish is the basic language spoken in the home and English is the language used in school. However, Soffietti[1] notes that bilingualism refers not only to the use of two languages but also to the fact that the individual lives in a different cultural atmosphere at home and in his neighborhood than the one prevailing in the community at large. Soffietti's definition fits the situation involved in the present study. Bilingualism poses a problem both for children whose parents commonly use a foreign language in the home and for educators who must determine when foreign languages should be introduced into the school curriculum.

The difficulty of learning a new language and the fact that children revert to the Spanish language immediately upon leaving the schoolroom present serious educational problems. Low socio-economic status and cultural level, class distinctions, racial prejudice, and religious practices engender emotional attitudes which color all the

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[1]James P. Soffietti, "Bilingualism and Biculturalism," Journal of Educational Psychology, 46 (April, 1955), 222-27.

actions of bilingual children. Mexican-American families live in sections to themselves and preserve their customs. They persist in the use of Spanish as the home language, and they reflect social traits that are foreign to the Anglo-Americans but which do not fit patterns in Mexico.

Children of Mexican-American heritage find it difficult to understand and respond in a situation that involves the English language or the Spanish language. Past studies have revealed that cultural, educational, and socio-economic status play a major role in the difficulties of these children. There is a significant difference in the Spanish dialect spoken in various sections of the United States. Since language is a learned process that is transmitted orally and in written form, children tend to learn what they hear and see.

There is a section in this country in which the Spanish and English language is spoken with a mixture of both languages, "Tex-Mex," a language difficult to understand both for those from Spanish speaking countries and from English speaking countries. This vernacular language is derived from the bordertown inhabitants' failure to fully understand the correct usage of the English language and of the Spanish language. Even in the classroom, the response of the children is more pronounced when Tex-Mex is used. The Tex-Mex language does not carry an accent, and its usage varies in accordance with the section of the

country where it is spoken. The usage of the Tex-Mex language is usually found among people of low socio-economic status and of poor educational backgrounds. Since the development of language ability is a gradual process, a child's language ability is affected if the child has to encounter an abrupt change--discarding one set of symbols and adopting a foreign one. A child from a foreign language background is likely to be teased and cut off from the group.

Even when he is not singled out by his peers, the child himself may be self-conscious about his background and language and may be timid when called upon to express himself. This may be true especially if he is in the process of transition from one tongue to another and if he still uses accents and speech forms from the foreign language, or if he still "thinks in a foreign language." The problems faced by children who come from one language background and then are forced at school to learn another are different from those faced by youngsters whose mother tongue is the prevailing language but who take up a foreign language as a school subject. The Mexican-American child is linguistically and culturally different from Anglo-Americans and Mexicans alike.

Background

Laredo, Texas, located on the banks of the Rio Grande River near the southern tip of Texas, is the principal city of Webb county. The economy to a large

extent depends on agriculture and international commerce. Laredo and her sister cities of Nuevo Laredo and Tamaulipas, Mexico, are the principal points of entry into Mexico on the Pan American Highway.

At the present time, there are twenty-six public schools in Laredo, including twenty-one elementary schools, four junior high schools and two senior high schools in which both academic and vocational courses are taught. These schools are fully accredited by the Texas Education Agency. In Laredo there are twelve private and parochial schools, including both elementary and high schools, the Southern Business College, and Laredo Junior College. Plans are being formulated for financing additional classrooms for the expansion of existing facilities in all of these schools in the city of Laredo, Texas.

With its historic background of Spanish and Mexican settlement and development, it is understandable that a large number of the inhabitants of Laredo are of Spanish and Mexican cultural and linguistic backgrounds. In addition to the native inhabitants of Laredo, a seasonal influx of migratory workers from the interior of Mexico takes place each year since cotton farming and cattle ranching are the main industries of the area. These workers, or "braceros," are issued temporary permits for work in this country. Many of them apply for permanent immigration papers and remain in Laredo with their families. Neither these workers nor their wives or children speak English.

Monterrey, the capital of the state of Nuevo Leon, was founded in 1596 by Don Diego de Montemayor and named in honor of the Count of Monterrey, Viceroy of Nueva Espana. By 1626, thirty years after its foundation, Monterrey was no more than a military outpost with a hundred settlers. In 1775 the settlement increased to 258 and by 1803 population increased to 6,412. In 1967, Monterrey had a population of 900,000.[1] Despite merciless suns, drought, and starved land, Monterrey was connected in 1882 by rail with Nuevo Laredo and the United States border. It is now connected by modern highways with the border cities of Laredo, Ciudad Miquel Aleman, Reynosa, and Matamoros. Monterrey, the principal industrial center of Mexico, has a large steel industry, glass factories, breweries, cement, construction material, automotive, textile and chemical plants, commercial zones and a large banking industry.

Monterrey's growth is indicated by its increasing number of public schools, private schools, social security centers, and child welfare organizations. It has two large universities, the State of Nuevo Leon University and the Technological Institute of Monterrey, a private institution of learning with students from the United States and Latin-America. The Technological Institute of Monterrey has numerous schools and colleges which are recognized in the United States.

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[1]The World Almanac, 1967 (New York: Newspaper Enterprise, Inc., 1967), p. 672.

The city is served by four newspapers, three television stations, and approximately twenty radio stations, making this one of the best informed areas of the country. Monterrey is the third largest city of the Republic and a gateway to Mexico.

Denton, Texas, the county seat, was established in 1857, and was named in honor of John B. Denton. The town was incorporated on September 26, 1866, with a mayor-alderman type of government. The population in 1967 was 36,000.[1]

The first public free school was established in 1883, and in 1894 the Denton public schools were affiliated with the University of Texas. Denton is best known as a university town, being the home of two outstanding universities, Texas Woman's University and North Texas State University. In addition to the universities, Denton is the center of an agricultural experiment station and has livestock and manufacturing industries, and an underground Niki base.

Statement of Problem

The observations of teachers, parents, and psychologists in the United States indicate that girls develop their verbal skills earlier than boys and that they are more competent in the use of words until at least adolescence.

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[1] The Municipal Year Book 1967 (Chicago: International City Managers Association, 1967), p. 565.

It is usually assumed that this sex difference is universal; that is, that girls in any culture exceed boys in early language performance. Our observations, however, have been made almost entirely in one culture. There is little evidence to support the belief that sex differences in language are universal.

The purpose of this study is to examine the language performance of boys and girls in three cultures, Mexican, Mexican-American, and Anglo-American, to determine if girls exceed boys in verbal performance in each of these cultures. The children will be tested with the Van-Alstyne Picture Vocabulary Test. The children in Monterrey will complete the test in Spanish; the children in Laredo will complete the test in Tex-Mex; and the children in Denton will complete the test in English. It is expected that girls will exceed boys on all three versions of the Van-Alstyne.

CHAPTER II

RELATED RESEARCH

No literature was found concerning sex differences in verbal ability relative to Mexican children. The literature on Mexican-American children, however, suggests it is not safe to generalize from studies of Anglo-American children to children raised in a Mexican culture.

Despite the numerous references and resources concerning the Mexican-American, there are complaints among educators about the lack of readily available and meaningful information about these children. A few studies, however, suggest some similarities and some differences in development among Mexican-American and Anglo-American children.

Jones[1] indicates that the Mexican-American group possesses a culture steeped in custom and tradition with a strongly authoritarian family pattern of a patriarchal form. Spika[2] found that Mexican-American achievers showed

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[1]R. C. Jones, "The Mexican Family in the United States," American Journal Sociological, 53 (May, 1948), 450-53.

[2]Bernard Spika, "Some Nonintellectual Correlates of Academic Achievement Among Mexican-American Secondary School Students," J. of Ed. Psych., 53 (June, 1962), 144-49.

reliably less hostility, more social maturity, intellectual efficiency, and conformity to rules than an underachieving Mexican-American group. Achieving girls and underachieving boys appear to come from strong, mother dominated homes.

Several instruments for measuring cultural attitudes have been developed. Mercado et al.[1] used Gardner's Object Sorting Test to assess the effects of cultural attitudes on two aspects of concept formation. The results indicated that American boys and girls did not differ in the preferred level of abstraction. Mexican boys, however, preferred working with abstractions more than did Mexican girls.

Jensen[2] compared Anglo-Americans and Mexican-Americans on immediate recall, serial learning, paired-associates and abstract objects. Anglo-American children of low IQ were slower learners than Mexican-American children of the same IQ. Mexican-Americans of above average IQ did not differ significantly in learning ability from Anglo-Americans of the same IQ.

Darcey[3] used the Pintner General Ability Test as a verbal test of intelligence and the Pintner Non-language

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[1]Seraffin Mercado et al., "Cognitive Control in Children of Mexico and the United States," J. of Social Psych., 59 (April, 1963), 199-208.

[2]Arthur R. Jensen, "Learning Abilities of Mexican-American and Anglo-American Children," Calif. Journal of Ed. Res., 12 (May, 1961), 147-59.

[3]Natalie T. Darcey, "Bilingualism and the Measurement of Intelligence," J. of Genetic Psych., 103 (December, 1963), 269-82.

Test, Form K, as a non-language intelligence test for bilinguals. His results indicated that administrations of intelligence tests of both verbal and non-language types yield a more valid picture of the intelligence of a bilingual population than a verbal test only. These studies suggest that culture influences the test performance of Mexican-Americans and that test performance differs between boys and girls in varying cultures.

The problem of differing cultures presents an obstacle to a valid measurement of intelligence. It is only through regional cooperation that these problems will ever be settled. More recently, legislation passed at the national, state, and local governmental levels has helped to encourage cross-cultural research. Such developments give encouragement to those concerned with education. Nevertheless, it is not difficult to see that much remains to be done to validate studies of American children using children from other cultures.

There exists an imperative need for children of Mexican-American descent to be met with sympathetic understanding upon entering the first grade in the elementary school. These children have heard, as a general rule, only Spanish in the home, and they have parents who speak only Spanish or broken English, and siblings who play Spanish games with Spanish words. The children are suddenly thrust

into an educational environment which demands the immediate use of spoken English and subsequently the use of written English.

A review of the literature on bilingualism reveals that retardation in intelligence has usually been found in the bilingual populations measured. There is little agreement as to the cause or causes of the retardation, but agreement is apparent when the unfairness of measuring bilinguals with tests that are standardized on English-speaking populations is pointed out.

Keston and Jiminez[1] studied Spanish-American children in Albuquerque, New Mexico, by giving them Form M of the 1937 Stanford-Binet Intelligence Test in English. Form L of the same test was administered in a Spanish translation. The authors point out that for intellectual purposes the use of Spanish ends with the beginning of English schooling and that this discontinued use of Spanish indicates that the Spanish form is not a valid instrument for the bilingual group in this area.

Bilingualism is generally recognized as a serious difficulty in the comparative psychological testing of many groups. The interpretation of findings on bilingualism

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[1]Morton J. Keston and Carmina Jiminez, "A Study of the Performance on English and Spanish Editions of the Stanford-Binet Intelligence Test by Spanish-American Children," J. Genet. Psych., 85 (March, 1954), 263-69.

is complicated by many factors. It cannot be assumed that verbal and non-verbal tests measure the same functions. Anastasi and Cordova[1] studied 176 Puerto Rican children in grades six to eight of a parochial school in New York City. Two forms of the Cattel Culture Free Test were given. One half of the group received the test instructions in English during the first testing session, Form A. The second session, using Form B, was given in Spanish. The order of the languages was reversed for the other half of the group. Among their findings there were indications that sex differences in performance could be attributed principally to rapport; the more highly Americanized boys responding more favorably to an English-speaking examiner. The fact that girls scored higher when instruction was in English may reflect differences in the degree of acculturation of the two sexes.

Mitchell[2] studied 236 Spanish-speaking pupils in grades one through three in a public school in Minnesota. The Otis Intelligence Test was administered in English and in Spanish to all the subjects. The mean IQ which had been secured from the Spanish testing was greater in each

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[1]Anne Anastasi and Fernando A. Cordova, "Some Effects of Bilingualism upon the Intelligence Test Performance of Puerto Rican Children in New York City," J. Educ. Psych., 44 (January, 1953), 1-19.

[2]A. J. Mitchell, "The Effect of Bilingualism in the Measurement of Intelligence," Elem.Sch. Journal, 38 (September, 1937), 29-37.

of the three grades than the mean IQ which had been secured from the English testing. For the three grades combined, the mean IQ was 9.28 points higher when the test was administered in Spanish. There were no reliable sex differences found; mean scores on the separate parts of the test in either language showed no substantial variation in performance on any particular part. It was concluded that bilingual children work under a serious handicap especially in the lower grades of the elementary schools and that the difficulty appeared to be a general language handicap rather than one in any specific phase of intelligence which the tests measure.

An intelligence test employing the English language is not an accurate measuring instrument when employed with subjects deficient in the assimilation of the culture of which English is reflective. To ascertain the degree of cultural assimilation for each subject, Johnson[1] used thirty boys from the age group nine to twelve years, combining the Hoffman Bilingual Schedule with the Reaction Time Technique. The Goodenough test of intelligence and the Otis intelligence test of mental ability were administered to each of the subjects. It was concluded that measuring the intelligence of

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[1]Granville B. Johnson, Jr., "Bilingualism as Measured by a Reaction Time Technique and the Relationship Between a Language and a Non-language Intelligence Quotient," J. Genet. Psych., 82 (March, 1953), 3-9.

bilingual subjects presents complex problems which possibly render both the verbal Otis and non-verbal Goodenough tests invalid.

Studies have been concerned with the effect of bilingualism on the child's language development, but a problem is encountered when the child hasaa dual language handicap. Several investigators note that the child cannot learn the second language well because he does not know the first language thoroughly. There is often a lack of clear concepts to which language symbols may be attached. This lack may be a product of a deprived environment. Darcy[1] reports that as bilingualism occurs among children of immigrants or other minority groups, it often tends to reduce proficiency in both languages. A child reared in a bilingual environment is, therefore, handicapped in his language growth.

The question of differences in intelligence between school children of Mexican descent and non-Mexican has been a topic of several research studies. These studies have not only included normal Mexican-American and Anglo-American children but some have included the sub-normal such as the Altus[2] study with two groups of dull school children; one

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[1]Natalie T. Darcey, "A Review of the Literature on the Effects of Bilingualism Upon the Measurement of Intelligence," J. Genet. Psych., 82 (March, 1953), 21-57.

[2]Grace T. Altus, "WISC Patterns of a Selective Sample of Bilingual School Children," J. Genet. Psych., 83 (September, 1953), 241-48.

bilingual and of Mexican descent and the other monolingual of non-Mexican descent. These children were equal in age, sex, and performance IQ on the Wechsler Intelligence Scale for Children. The differences in IQ on the verbal scale of this test averaged seventeen points in favor of the monolingual group, a difference which was highly significant. The results indicated that the scale might be of value in the differential diagnosis of borderline cases of psychometric mental retardation within a bilingual Mexican-descent population and might offer some evidence as to the handicapping influences of bilingualism in this particular minority group.

Another study was conducted by Shotwell[1] comparing the differences in the results on the Stanford-Binet Scale and the Arthur Performance Scale for 80 Mexican and 80 American mentally retarded patients of comparable ages at Pacific Colony. It was concluded that Mexicans and other racial groups are "inadequately measured and unduly penalized" when they are measured by verbal tests of intelligence which have been standardized on American populations.

Dunn and Harley[2] conducted a similar study, the purpose of which was to appraise the intelligence of cerebral

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[1]A. Shotwell, "Arthur Performance ratings of Mexican and American High Grade Mental Defectives," Amer.J. Mental Def., 49 (January, 1945), 445-49.

[2]L. M. Dunn and R. K. Harley, "Comparability of Peabody, Ammons, Van Alstyne and Columbia Test Scores with Cerebral Palsied Children," Exceptional Children, 26 (September, 1959), 70-74.

palsied children. The study investigated the comparability of four individual tests of intelligence with cerebral palsied children. One test, the Peabody Picture Vocabulary Test, was new to the field. The others, the Van Alstyne Picture Vocabulary Test, the Columbia Mental Maturity Scale, and the Ammons Full-Range Picture Vocabulary Test, have been in use for some time. There were ten boys and ten girls in the groups examined. The children were classified as ten athetoid, nine spastic, and one ataxia. The four instruments were administered to twenty children with various types and degrees of cerebral palsy. The Peabody Picture Vocabulary Test was found to have the highest and the Columbia the lowest "floor" among the four tests. Older cerebral palsied children obtained low mental ages on the Van Alstyne and Columbia probably indicating insufficient "ceiling," especially for the Van Alstyne Test. Means of the Ammons mental age scores were significantly higher than those of the Van Alystyne and Columbia Tests.

Alternate form reliability coefficients were found to be 0.97 for the Peabody Picture Vocabulary Test and 0.86 for the Ammons. The results of this study indicate that all four tests can be used successfully with cerebral palsied children in predicting school success. The Van Alstyne should be used only for children with mental ages below eight, and the Columbia for children above four. Dunn and Harley concluded that both the revised Van Alstyne Picture Vocabulary

and Columbia Mental Maturity Scale appear to be much more satisfactory than the original versions.

Corwin[1] studied and compared groups of Mexican-American and Anglo-American children who were matched for age, school grade placement and total IQ. All of the subjects lived in a community with integrated housing and freely associated with children from other backgrounds. The children of Mexican descent were not significantly different from the children of Anglo descent on most non-language scores. However, children with a Spanish language background scored significantly lower than children with an English language background on many verbal tests. Corwin suggested that any test "dependent upon language is not appropriate for appraising ability levels of children with a Spanish language background."

Rice[2] examined the various abilities which make up the global factor called intelligence. When devices were deliberately developed to measure "pure" capabilities, such as serial learning, scores between Mexican-American and Anglo-Americans were dissimilar at the low IQ levels. He stated that even when cross-cultural subjects were matched for total IQ and other composite criteria, they still differed

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[1]Betty Corwin, "The Influence of Culture and Language on Performance of Individual Ability Tests" (unpublished paper, San Fernando Valley State College, California, 1961).

[2]Joseph P. Rice, "Education of Subcultural Groups," School and Society, 92 (November 28, 1964), 360-62.

in their ability to perform on various subtests. He believes that bilinguals are more likely to stay in school when they are mingled with monolingual majorities.

There has been considerable discussion and controversy among educators and psychologists regarding sex differences in verbal development. A few studies have specifically investigated sex differences in a bilingual setting. Carrow[1] conducted a study of English language ability and achievement. This study examined a group of monolingual children and a group of bilingual children in San Antonio, Texas. Both groups were similar in age, grade, socio-economic status, and intelligence. Four elementary schools in San Antonio were screened to select subjects for the experiment. The experimenter selected fifty monolingual and fifty bilingual children. The California Test of Achievement, the Durrell-Sullivan Reading Capacity Test, the Gilmore Oral Reading Test, the Fairbanks Test of Articulation, and a three-minute sample of oral language recorded on tape were used to judge differences. The monolingual group was superior in oral reading accuracy, oral reading comprehension, hearing vocabulary, arithmetic reasoning, and speaking vocabulary. There was no difference found in silent reading, comprehension of vocabulary, oral rate, spelling, verbal output, length of clause, and

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[1]Sister Mary Arthur Carrow, "Linguistic Functioning of Bilingual and Monolingual Children," Journal of Speech and Hearing Disorders, 22 (September, 1957), 371-74.

degree of subordination. The bilingual group made more and different types of articulatory and grammatical errors than the monolingual group. The boys did not differ significantly from the girls in any of the measures of language function except that of oral rate in reading, in which the girls were superior. This study implied that teachers of bilingual Mexican-American children should be conversant with the language problems of these children particularly with regard to their difficulties with word meanings and grammatical errors.

A similar study was conducted to investigate sex differences in reading ability. It is possible that more girls than boys pursue a kind of life in which more respect, more incentives, and more opportunities for reading appear earlier and persist longer. In contrast more boys than girls may find little or no early need for learning to read. Gates[1] studied sex differences in reading ability based on the test scores of 13,114 pupils; 6,646 boys and 6,468 girls in grades second through eighth. Each child included in the study took all three of the Gates Reading Survey tests; Speed of Reading, Vocabulary, and Level of Comprehension. The tests were given in the spring of 1957 in twelve school systems in ten states. The results indicated that "in each of the twenty-one comparisons the mean raw score for the

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[1]A. I. Gates, "Sex Differences in Reading Ability," Elem. Sch. J., 61 (May, 1961), 431-34.

boys was lower, and most of the differences are significant." It was concluded that "the present data suggest an environmental rather than a hereditary explanation."

In several studies, girls have appeared to have an advantage over boys in early language development. Olson,[1] comparing the growth curves in language for boys and girls from the same family, found that, age for age, the girls regularly exceeded the boys. He further stated that many of the differences may be due to maturity rather than sex.

Girls exceeded boys in the number of words spoken and the number of different words used in most comparisons. However, in the case of the ratio of the total number of words spoken to the number of different words used, the differences are not consistent or large. In order to eliminate these differences, as far as possible, Jersild and Ritzman[2] made comparisons with an equal number of boys and girls, matched with respect to chronological age, mental age, and IQ. Boys surpassed girls at the two-year level, girls surpassed boys at the three and four year levels, and in the results for all ages combined. In the combined records, the boys showed an average of 1306 words spoken, as compared with 1379 for the girls. According to the

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[1]W. C. Olson, Child Development (Boston: D. C. Heath, 1959), p. 155.

[2]A. T. Jersild and R. Ritzman, "Aspects of Language Development: The Growth of Loquacity and Vocabulary," Child Development, 9 (December, 1938), 243-59.

statistical computations of Jersild and Ritzman, the chances are forty-seven in a hundred that there is a true difference between boys and girls in number of words spoken. It was concluded that sex differences in verbosity and vocabulary indicated that girls tend quite consistently to surpass the boys, but not to a degree that is statistically significant. In the matter of size of active vocabulary in relation to loquacity there are no conspicuous or reliable differences.

The child's family is also an important consideration in his linguistic fluency. There is considerable evidence of the relationship between socio-economic status of family and the child's linguistic development. Children from more favored environments use more words meaningfully at earlier ages. Fisher[1] used a highly selected group of children and found that the mean number of words per response for the girls was greater than for the boys at each age except at forty-two and fifty-four months, at which levels the boys excelled. It was concluded that the children who show superiority in linguistic development come nearly always from families of professional men.

In a more recent study, Templin[2] found consistent differences in the language performance of children from

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[1]M. F. Fisher, "Language Patterns of Preschool Children," J. of Exp. Educ., 1 (September, 1932), 70-74.

[2]M. C. Templin, "Certain Language Skills in Children," Inst. Child Welf. Monog. Series, 26 (Minneapolis: University of Minnesota Press, 1957), p. 150.

upper and lower socio-economic levels. Differences in the linguistic environment provided by homes of the two levels were recognized. It was concluded that the differences between the sexes were less pronounced.

A similar study was done in sex differences in relationship to social status. Havighurst and Breese[1] studied all the children living in a Midwest community who were born in the year 1932. The children were distributed from grade four through grade nine, with the great majority of them in the eighth grade. The Thurstone Primary Mental Abilities Tests were given to all thirteen-year-old children residing in attypical middle-western community of six thousand inhabitants. The test results were compared for social class groups and for age groups. Girls exceeded boys in the number of words, word fluency, reasoning, and memory tests, while boys exceeded girls in the space test. There was no reliable difference in the verbal comprehension test. It was also concluded that children of higher family social status tended to do better in all of the tests than children of lower social position. The differences were not completely reliable, however, for it appears probable that the relation between ability and socio-economic status is more positive in the number, verbal, and word fluency abilities than in the space, reasoning and memory abilities.

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[1]R. J. Havighurst and F. H. Breese, "Relation Between Ability and Social Status in a Midwestern Community III Primary Mental Abilities," J. Ed. Psych. 38 (December, 1947), 241-47.

In overall measures of intelligence, there are probably no important differences between boys and girls. On the question of qualitative intellectual differences between girls and boys, there is a difference. McNemar[1] conducted a study using the 1937 Stanford-Binet, eliminating items that had shown sex differences. Girls were found to do better on tasks involving language, aesthetic matters, and social skills. Boys were better on mathematical, mechanical, and absurdity items. It was concluded that males showed a superiority in dealing with problems of space, while females performed better in memory, reasoning, and verbal fluency.

Girls are expected to exceed boys in language skills because females mature more rapidly than males. Earlier studies of sex differences in language development show female superiority in vocabulary, articulation, and length of sentences up to the age of ten. Some writers view this problem as directly related to a developmental cycle. McCarthy[2] found that girls were slightly superior in the length of sentences used at most age levels. The author considered the differences between the sexes as "suggestive and possibly significant although they do not meet the statistical criterion of the significance of a difference."

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[1]G. McNemar, The Revision of the Stanford-Binet Scale (Boston: Houghton Mifflin, 1960), pp. 180-99.

[2]D. McCarthy, "Language Development of the Preschool Child," Inst. Child Welf. Monog. Series, 4 (1930), xiii-174.

The author called attention to the fact that

> Girls may go through the developmental cycle more rapidly than do the boys, but the boys practically equal them at the close of this rapid developmental period. As reasonable as it may seem to attribute this feminine superiority to developmental and maturational factors, this may not be entirely the case.[1]

Sampson[2] conducted a study recently and found few sex differences in verbal facility between boys and girls. He concluded that environmental considerations may be involved; however, forces that once favored girls may have become more equal in their influence. The results indicated that environmental changes over a period of time have reduced other areas of individual changes. These same shifts may have reduced sex differences also.

Early studies indicated a positive relationship between mother and child identification and verbal articulation. Verbal differences in favor of girls are present as soon as children begin to talk; that is, at about the age of true prelinguistic language. This fact may account for the differences between the sexes which are small in magnitude but seem to be of considerable importance for the later acquisition of language. All statistics on language disorders, particularly on the incidence of stuttering and reading disabilities, reveal that language disturbances

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[1] Ibid.

[2] O. C. Sampson, "The Speech and Language Development of Five Year Old Children," Brit. Ed. Psych., 29 (July, 1959), 217-22.

occur much more among boys than among girls. Case studies of language disorders show that sixty-five to 100 per cent of language disorders occur among boys. The roots of the sex differentiation in language development must be sought in early infancy, for the differences appear at an extremely early age.

The vital importance of imitative babbling in the establishment of language patterns is well recognized. Strengel[1] has stressed especially the importance of the so-called "echo-reaction" stage in which the baby babbles back to the mother approximations of the sounds made by her. This is pleasant and satisfying to the infant and is considered to facilitate identification with the adult who provides the language model.

Wyatt[2] emphasized the importance of the emotional quality of the early mother-child relations and the fact that the learning of the mother's speech is achieved through a process of unconscious identification. The mother is thus the child's first language teacher and as such is the first mediator of this vital cultural heritage.

In the American culture, the boy is encouraged in active games, and even at the nursery age, when he is

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[1]E. Strengel, "A Clinical and Psychological Study of Echo-Reactions," J. Men. Sci., 93 (September, 1947), 598-612.

[2]G. L. Wyatt, "Stammering and Language Learning in Early Childhood," J. Abn. Soci. Psych., 44 (October, 1949), 75-84.

acquiring language skill, he is sent outdoors to play more often than is a girl. A boy is separated from further adult linguistic stimulation. Boys are also more likely to play with blocks and wheel toys and objects low in conversational value. Girls, on the other hand, are encouraged in indoor play with dolls, household toys, and table-play which have been shown to be of high conversation value. Girls are more likely to be permitted to be around the kitchen and other centers of household activity, and they have more constant adult attention.[1] Girls are, then, more likely to be found within question-asking range of the mother and are more likely than their brothers to enjoy maternal contact and linguistic stimulation. It is possible that such factors explain the small differences found in the averages for the two sexes.

This review, although not exhaustive, indicates the importance of studying cross-cultural sex differences on a verbal test. While extensive studies have been made of American children, no study using Mexican students as subjects has been found. Although numerous and valuable investigations in the field of language development have been recorded in America and in Europe, additional research is needed in the field of Mexican-American and Mexican

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[1]D. Van Alstyne, Play Behavior and Choice of Play Materials of Preschool Children (Chicago: University of Chicago Press, 1932).

children. Studies of language development are important to furnish information concerning factors which may significantly influence verbal responses.

CHAPTER III

PROCEDURE AND LIMITATIONS

Procedure

In this study three groups, Mexican-American, Mexican, and Anglo-American, were investigated. One group was composed of first-graders from elementary schools in the Laredo Independent School District, Laredo, Texas. The second group was composed of first-graders from Monterrey, Nuevo Leon, Mexico. The third group was composed of first-graders from Denton, Texas. There were thirty in each group, fifteen boys and fifteen girls. The groups were matched for age, sex, and grade level. Verbal ability was determined by scores on translations of the Van Alstyne Picture Vocabulary Test, in the so-called "Tex-Mex" for the first grade in the Laredo group, conventional Spanish for the Monterrey group, and the English form for the Denton group.

Means and standard deviations on the Van Alstyne were computed. These mean scores were compared using "t" tests to determine if there were differences between boys and girls on each of the three translations of the Van

Alstyne. An item analysis was completed for the Spanish and Tex-Mex versions of the Van Alstyne to develop the test for further research. This study tested the null hypothesis that there would be no significant differences between females and males in any of the three cultures on a test of verbal ability. The null hypothesis was accepted or rejected at .05 level of significance.

The tests used in this study were revisions of the 1929 Van Alstyne Picture Vocabulary Test for Preschool Children. The test is described as a quick, individually administered screening test for mental ability designed for children in the mental age range from two to seven years. The test consists of a spiral booklet containing sixty plates, all of which are administered to the subject. No verbal response is required; the child is asked to point to the one of four pictures on a page which corresponds to the stimulus word given by the examiner. Administration takes approximately fifteen minutes and scoring consists simply of summing correct responses and determining the appropriate mental age from a table listing all possible scores. The nonverbal aspects of the test make it especially suited to children with delayed speech or speech handicaps and for those with motor impairments.

According to the Sixth Mental Measurement Yearbook[1]

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[1]Oscar K. Buros, The Sixth Mental Measurement Yearbook (Highland Park, N. J.: The Gryphon Press, 1965), p. 658.

the standardization data presented are scores of 500 subjects between the ages of four and seven. Second grade pupils served as the basis for the table of mental age equivalents which range from two years one month through ten years and five months. These mental ages were established by comparisons with scores achieved on the Stanford-Binet by the preschool subjects but from a variety of group intelligence tests for first and second graders.

The only evidence offered for validity consists of correlations between the Van Alstyne and other intelligence tests in terms of test scores and of intelligent quotients. The establishment of the Van Alstyne mental age norms was derived essentially through a study of the equivalence of Van Alstyne scores and Stanford-Binet mental ages for preschool groups and of Van Alstyne scores and results of various group intelligence measures for in-school groups. Correlations of the other tests with the Van Alstyne, both for mental age, raw scores, or IQ's, ranged only from .49 to .71. Split-half reliabilities for the four age groups range from .71 to .85 and the standard error of measurement is two raw score points at age seven, but close to three points for each of the younger age levels.

The per cent of subjects in the standardization sample answering each item correctly at successive mental ages of four, five, and six was determined. Increase in per

cent passing with increasing mental age was assumed to be one indicator of item validity; the sixty items which comprised the final scale were selected largely on the basis of their ability to discriminate in this way.

Limitations

Generalizations from this study will be limted by the small sample that was used. The pupils were from only one area of Texas and one area of Mexico. In addition, the Van Alstyne Picture Vocabulary Test is a measure of spoken vocabulary; and veneralizations to reading and written vocabulary are limited.

CHAPTER IV

RESULTS

The study examined the language performance of boys and girls in three cultures--Mexican, Mexican-American, and Anglo-American--to determine if girls exceeded boys in verbal performance in each of these cultures. There were thirty subjects in each group; fifteen boys and fifteen girls from Monterrey, Mexico, and Laredo and Denton, Texas. The children in Monterrey were tested in conventional Spanish; the children in Laredo in "Tex-Mex"; and the children in Denton were tested in English. The hypothesis for the investigation stated that there would be no significant difference between females and males in any of the three cultures on a test of verbal ability. The findings in all three cultures were that there were no significant sex differences between girls and boys on a test of verbal ability.

In order to test the null hypothesis of this study, first grade children were selected from the elementary schools of a small area of Texas and Mexico. The result for the Mexican girls was a mean of 53.9 and a mean of 53.0 for Mexican boys. A "t" test comparing boys and girls was .75. There was no significant difference between boys and

in the Mexican sample. Laredo girls obtained a mean of 50.2, and the boys obtained a mean of 48.0; a "t" test comparing both groups was 1.63. There was no significant difference between boys and girls in the Laredo sample. The mean for the Denton girls was 47.0 and the mean for the Denton boys was 45.0. A "t" comparing boys and girls in Denton was 1.19. There was no significant difference between boys and girls in the Denton sample. These results are presented in Table 1. There were no significant differences between boys and girls in any of the three cultures.

TABLE 1.

RESULTS OF THE VAN ALSTYNE PICTURE VOCABULARY TEST ADMINISTERED TO THREE GROUPS OF FIRST GRADE CHILDREN

Group	Mean		"t"	df	Significance
	Girls	Boys			
Monterrey	53.9	53.0	.75	28	N.S.
Laredo	50.2	48.0	1.63	28	N.S.
Denton	47.0	45.0	1.19	28	N.S.

An item analysis was performed in order to determine the level of difficulty for each item on the test in conventional Spanish. Most of the items on the Spanish test used in Mexico were appropriately easy at the beginning level; the vocabulary became more difficult as the pupils progressed.

Items 45, 47, 52, and 53, however, seemed misplaced. They were passed by at least 97 per cent of the students, but appeared along with the more difficult vocabulary words. These items could be replaced with items of a more difficult nature so that the test would be progressively more difficult. (See Table 2.)

An item analysis was performed in order to determine the level of difficulty for each item of the test in "Tex-Mex" for the Laredo group. Most of the items on the "Tex-Mex" test used in Laredo were suitably easy at the beginning level; the vocabulary became more difficult as the pupils progressed. Items 45. 47, and 51, however, seem misplaced. They were passed by at least 97 per cent of the students and appeared along with the more difficult vocabulary words. These items could be replaced with items of a more difficult nature sotthat the test would be progressively more difficult. The following tables present the level of difficulty for each item on both the Spanish (Table 2) and the "Tex-Mex" translations (Table 3) of the Van Alstyne Picture Vocabulary Test.

TABLE 2

RESULTS OF THE VAN ALSTYNE PICTURE VOCABULARY TEST
LEVEL OF DIFFICULTY FOR MONTERREY GROUP

Item No.	Per Cent		Item No.	Per Cent	
	Right	Wrong		Right	Wrong
1	100	0	31	100	0
2	100	0	32	93	7
3	100	0	33	97	3
4	100	0	34	90	10
5	100	0	35	97	3
6	100	0	36	100	0
7	100	0	37	100	0
8	100	0	38	100	0
9	100	0	39	50	50
10	100	0	40	80	28
11	100	0	41	70	30
12	97	3	42	56	44
13	100	0	43	46	54
14	100	0	44	73	27
15	100	0	45	97	3
16	100	0	46	43	57
17	97	3	47	100	0
18	100	0	48	83	17
19	100	0	49	90	10
20	100	0	50	80	20
21	90	10	51	86	14
22	100	0	52	97	3
23	100	0	53	93	7
24	100	0	54	76	24
25	100	0	55	80	20
26	100	0	56	83	17
27	100	0	57	83	17
28	90	10	58	80	20
29	97	3	59	70	30
30	46	54	60	36	64

TABLE 3

RESULTS OF THE VAN ALSTYNE PICTURE VOCABULARY TEST
LEVEL OF DIFFICULTY FOR LAREDO GROUP

Item No.	Per Cent		Item No.	Per Cent	
	Right	Wrong		Right	Wrong
1	100	0	31	97	3
2	100	0	32	83	17
3	100	0	33	100	0
4	100	0	34	93	7
5	100	0	35	66	34
6	100	0	36	97	3
7	100	0	37	97	3
8	100	0	38	83	17
9	100	0	39	33	67
10	100	0	40	97	3
11	100	0	41	36	64
12	100	0	42	56	44
13	100	0	43	36	64
14	100	0	44	33	67
15	100	0	45	96	4
16	100	0	46	53	47
17	100	0	47	96	4
18	100	0	48	63	37
19	97	3	49	90	10
20	97	3	50	26	74
21	86	14	51	100	0
22	97	3	52	80	20
23	90	10	53	80	20
24	80	20	54	53	47
25	100	0	55	80	20
26	86	14	56	73	27
27	97	3	57	43	57
28	97	3	58	80	20
29	97	3	59	73	27
30	43	57	60	40	60

A discriminating item is one on which the high scoring pupils responded correctly and the low scoring students responded incorrectly. An index of discrimination was used in order to determine the effectiveness of the individual items on the Spanish test. For the conventional Spanish test used in Mexico, ten from the high ranking and ten children from the low ranking students were chosen. Most of the items on the conventional Spanish test were satisfactorily discriminating except for items 52 and 58 which showed no discrimination between the high and low groups. (See Table 4.)

An index of discrimination was used in order to determine the effectiveness of the individual items on the "Tex-Mex" test. For the "Tex-Mex" test used in Laredo, ten from the high ranking children and ten from the low ranking children were chosen. Most of the items on the "Tex-Mex" test were satisfactorily discriminating except for items 49 and 54 which showed no discrimination between the high and the low groups. (See Table 5.)

Tables 4 and 5 present the level of discrimination for each item on both the Spanish and the "Tex-Mex" translations of the Van Alstyne test. An item analysis indicated that only a few of the items on the Spanish or "Tex-Mex" versions of the Van Alstyne test failed to meet the usual criteria of level of difficulty and item discrimination.

TABLE 4

RESULTS OF THE VAN ALSTYNE PICTURE VOCABULARY TEST
ITEM DISCRIMINATION ADMINISTERED
TO THE MONTERREY GROUP

Item No.	Per Cent		Item No.	Per Cent	
	Right High	Wrong Low		Right High	Wrong Low
1	100	100	31	100	100
2	100	100	32	100	80
3	100	100	33	100	90
4	100	100	34	100	80
5	100	100	35	100	100
6	100	100	36	100	100
7	100	100	37	100	100
8	100	100	38	100	100
9	100	100	39	100	20
10	100	100	40	100	70
11	100	100	41	100	40
12	100	80	42	100	30
13	100	100	43	100	20
14	100	100	44	100	40
15	100	100	45	100	100
16	100	100	46	100	30
17	90	90	47	100	100
18	100	100	48	100	80
19	100	100	49	100	80
20	100	100	50	100	70
21	100	100	51	100	70
22	100	80	52	100	100
23	100	100	53	100	80
24	100	100	54	100	60
25	100	100	55	100	60
26	100	100	56	100	70
27	100	100	57	100	50
28	100	70	58	100	100
29	100	100	59	100	100
30	100	20	60	100	20

TABLE 5

RESULTS OF THE VAN ALSTYNE PICTURE VOCABULARY TEST
ITEM DISCRIMINATION ADMINISTERED
TO THE LAREDO GROUP

Item No.	Per Cent		Item No.	Per Cent	
	Right High	Wrong Low		Right High	Wrong Low
1	100	100	31	100	100
2	100	100	32	100	80
3	100	100	33	100	90
4	100	100	34	100	80
5	100	100	35	100	100
6	100	100	36	100	100
7	100	100	37	100	100
8	100	100	38	100	100
9	100	100	39	100	20
10	100	100	40	100	70
11	100	100	41	100	1
12	100	100	42	100	40
13	100	80	43	100	1
14	100	100	44	100	20
15	100	100	45	100	90
16	100	100	46	100	30
17	100	90	47	100	100
18	100	100	48	100	40
19	100	100	49	100	100
20	100	100	50	100	1
21	100	80	51	100	90
22	100	100	52	100	60
23	100	100	53	100	90
24	100	100	54	100	1
25	100	100	55	100	60
26	100	100	56	100	50
27	100	100	57	100	30
28	100	70	58	100	30
29	100	100	59	100	50
30	100	20	60	100	20

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate cross-cultural sex differences among first-graders on a test of verbal ability, a translation of the Van Alstyne Picture Vocabulary Test. The study examined the language performance of boys and girls in three cultures--Mexican, Mexican-American, and Anglo-American--to determine if girls exceeded boys in verbal performance in each of these cultures. There were thirty subjects in each group; fifteen boys and fifteen girls from Monterrey, Mexico, and from Laredo and Denton, Texas. The children in Monterrey were tested in conventional Spanish; the children in Laredo in "Tex-Mex"; and the children in Denton were tested in English.

The hypothesis formulated for the investigation stated that there would be no significant difference between females and males in any of the three cultures on a test of verbal ability. The findings in all three cultures indicated that there were no significant sex differences between girls and boys on a test of verbal ability.

The present investigation fails to support previous research studies in the United States which indicate sex

differences in verbal intelligence as early as the first grade. Additional studies need to be made of Mexican and Mexican-American children to examine sex differences cross-culturally.

This study was conducted in an effort to develop a translation of the Van Alstyne test into the Spanish language for use in Spanish speaking areas. No instrument of this type was available in Spanish; therefore, a translation of an American instrument was the method used for developing this verbal test. Laredo, Texas, a gateway to Monterrey, Mexico, is neither isolated from the influence of its Mexican inhabitants nor from those in the interior of Mexico. Consequently, the English used in Laredo possesses a vast amount of Mexican coloration. For example, item 20 in the Van Alstyne test, "fosforo," would be used in Mexico City or the interior but "mecha" is used in Monterrey and in the Laredo area. Only five items were translated into "Tex-Mex" for the Laredo group; the remainder of the test was translated into conventional Spanish used in Monterrey, Mexico. Apparently an instrument constructed for Mexicans would be useful for the Mexican-American as well. There were no major differences between the "Tex-Mex" and the Spanish translations of the instrument used in this study.

Analysis of the results of the testing in Mexico and Laredo suggest certain changes in the vocabulary which should

be incorporated in the instrument to make it appropriate for use in Monterrey, Mexico, and Laredo, Texas. In some instances the structure and vocabulary used in the translation, although good, universal Spanish, was considered to be awkward and possibly misleading for the Mexican child unfamiliar with the more formal, scholarly forms. It seemed desirable to put the items in a form which was familiar to the children, while still attempting to avoid using colloquialisms in the verbalizations.

A few items were changed for cultural reasons. An example of this was item 23 which proved unsatisfactory for the Mexican and Mexican-American cultures. The item is "teakettle" or "caldera," unfamiliar to Mexicans or Mexican-Americans. Only two revisions were made for cultural reasons: items 39 and 48; additional experience with the vocabulary of the children might indicate other items which should be revised.

It is important to study cross-cultural sex differences on a verbal test because studies contradict one another as to whether girls tend to exceed boys in verbal ability or not. These studies, completed in the United States, need to be developed cross-culturally to see if there are differences common to all cultures. Studies have been completed in Europe and America but additional research is needed with the Mexican-American and Mexican. The

ultimate adequacy of the Van Alstyne test as an experimental instrument must still be proven; the process of developing it has met with unexpected cultural and linguistic differences. If the instrument proves to be of value, then investigations of its appropriateness for use in other regions of Mexico should be made. The possibilities for further research, as indicated by this study, are almost limitless. Verbal tests are not available in Mexico; therefore, any research in this area is open. This study could provide a starting point.

APPENDIX

Traduccion Del Van Alstyne Picture Vocabulary Test, Examenes de Reconocimiento con Figuras Ilustradas

Administracion de la prueba

Antes de aministrar la prueba se debe recopilar toda la información necesaria en la joha individual de contestaciones. El folleto que contience las láminas debe estar fuera del alcance visual del niño para evitar que éste se distraiga hasta que el aministrador de la prueba esté listo.

Al administrar la prueba esté seguro de dar las instrucciones para cada lámina exactamente como indico mas adelante. Pronuncie las palabras distintivamente.

Abra el folleto, ponga la cubierta detrás del folleto y enseñe la lámina de ejémplo de forma tal que la palabra "ejemplo" este de frente al niño. Señale las cuatro láminas una a una diciendo:

"Mira estas laminas."

"Esename la bicicleta."

si el niño no entiende las instrucciones diga:

"Senálame con tu dedo la bicicleta." o ¿Donde está la bicicleta?

Continúe trabajando con la lámina de ejemplo hasta que este seguro que el niño entiende lo que va a hacer.

Las palabras o frases de estimulo para presentar nombres y adjectivos son como siguen:

"Ensename la _____.

Para verbos:

"Muestrame cuál es el niño, niña, niños, etc."

"Quien es _____ o cuáles son _____ "

o muéstrame qué es _____.

Grupo I Pares Nones

	MEXICO	LAREDO
1.	caja	
3.	calcetines	
5.	clavo	
7.	barrica	
9.	niños besandose	
11.	humo	
13.	niño que esta parado	
15.	tecolete	
17.	niña que esta bebiendo	niña que esta drinquiado
19.	corneta	
21.	vendaje	
23.	caldera	cafetera
25.	niña que esta corriendo	
27.	huella	
29.	tornillo	
31.	perico	
33.	manga	
35.	dedal	
37.	pantalones	
39.	desembarcadero	
41.	niños que salvan al perro	
43.	guarneciones	
45.	raices	
47.	salvajes	

MEXICO	LAREDO
49. niño que acerrea la madera	
51. columa	
53. cupula	
55. capullo-del gusano de seda	
57. lirios	
59. declive	

Grupo II Numeros con pares

	MEXICO	LAREDO
2.	quien esta ladrando	
4.	tijeras	
6.	cerdo	
8.	pan	
10.	niña que esta trepandose	
12.	caja vacia	
14.	niña que esta dibujando	
16.	durazno	
18.	flor	
20.	mecha	
22.	niña que esta levantando	
24.	hombres que estan senalando	
26.	niña que esta estudiando	
28.	trompeta	
30.	cabus	
32.	bebitos que gatean	
34.	que esta evaporan vaporizando	
36.	niña que rebota la pelota	
38.	papel arrugado	
40.	gorra	
42.	racqueta	
44.	timon	
46.	brujula	compass
48.	obelisco	monumento

MEXICO	LAREDO
50. gansos	
52. insectos	
54. estaca	
56. palanca	
58. cima	
60. palacio	

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